

CLAIMS

1. A method of differentiating and proliferating a mesenchymal stem cell into a neural cell by culturing a mesenchymal stem cell in a medium comprising an epidermal growth factor and a hepatocyte growth factor after confluent culturing the mesenchymal stem cell.
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2. The method of claim 1, wherein the mesenchymal stem cell is cultured for more than 1 week in a medium comprising about 1 to about 10,000ng/ml by concentration of the epidermal growth factor and about 1 to about 10,000ng/ml by
10 concentration of the hepatocyte growth factor after confluent culturing the mesenchymal stem cell for about 1 to about 50 hours.
3. The method of claim 1, wherein the mesenchymal stem cell is cultured for more than 1 week in a medium comprising about 10ng/ml by concentration of the
15 epidermal growth factor and about 20ng/ml by concentration of the hepatocyte growth factor after confluent culturing the mesenchymal stem cell for about 24 hours.
4. The method of any one of claim 1 to 3, wherein the mesenchymal stem cell is
20 cultured for about 2 weeks in the medium containing the epidermal growth factor and the hepatocyte growth factor and then the medium comprising the epidermal growth factor and the hepatocyte growth factor is changed with a medium comprising only

the epidermal growth factor.

5. The method of claim 4, wherein the mesenchymal stem cell is obtained from a human bone marrow.

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6. The method of claim 4, wherein the mesenchymal stem cell is a mononuclear cell comprising the mesenchymal stem cell obtained from the human bone marrow.

7. A use of a neural cell differentiated by the method of any one of claims 1 to 6
10 for treating traumatic central nervous system disease or spinal cord injury.

8. A method of treating traumatic central nervous system disease or spinal cord injury comprising administering the neural cell differentiated by the method of anyone of claims 1 to 6 to a mammal comprising a human.